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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/574,258 | 03/28/2006 | Angelo Beati | 12928/10026 | 9739 |

26646 7590 03/23/2007
KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

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| EXAMINER |
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PALABRICA, RICARDO J

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| ART UNIT | PAPER NUMBER |
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3663

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/23/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

| | | |
|-----------------|--------------|--|
| Application No. | Applicant(s) | |
| 10/574,258 | BEATI ET AL. | |
| Examiner | Art Unit | |
| Rick Palabrica | 3663 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>3/28/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by any one of Canat et al. (U.S. 5,183,629) or Nylund (U.S. 6,385,271) or Hirano et al. (U.S. 6,400,788).

Canat et al. disclose an additional grid for a nuclear fuel assembly (e.g., see Figs. 1-4). Their fuel assembly comprises: a) fuel rods 36 (e.g., see Fig. 2); b) supporting skeleton having two nozzles 12 and 14 (see Fig. 1); c) guide tubes 16 (see Fig. 1); d) spacer grids 22, 24; and e) additional grid 26, which reads on applicant's claim language, "lattice reinforcing device."

Nylund discloses a fuel assembly for a pressurized water reactor comprising (see Figs. 1-7): a) nuclear fuel rods 2; b) supporting skeleton having two nozzles, i.e., top nozzle 4 and bottom nozzle 5 (see Fig. 1 and col. 2, lines 23+); c) guide tubes 13 (see col. 2, lines 55+); and d) spacer grids 3. Applicant's claim language, "lattice reinforcing device," reads on the section of central partial spacer 11 that receives guide tubes and fuel rod (see Fig. 4 and col. 2, lines 60+). This partial spacer is disposed between spacers 10 and 3 (see Fig. 2).

Hirano et al. disclose a nuclear fuel assembly comprising nuclear fuel rods 2 (e.g., see Figs. 1-4). Applicant's claim language reads on Hirano et al. as follows: a) "supporting skeleton having two nozzles" reads on the upper lattice and the lower lattice, which lattices inherently act as nozzles for water coolant flow through them; b) "guide tubes" reads on the plurality of water rods 3, which rods act to provide structural rigidity to the fuel element (see Fig. 3); and d) "spacer grids" reads on the plurality of spacer grids 4 (see Fig. 2). Applicant's claim language, "lattice reinforcing device," reads on water rod holding member 12 (see Fig. 7 and col. 16, lines 52+). One can always find a holding member that is disposed between two spacers 204b.

2. Claims 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by either one of Nylund or Hirano et al.

Nylund

As to claims 14 and 15, Nylund shows in Fig. 4 that partial spacer 11 does not enclose the peripheral rods and the adjacent layer of rods.

As to claim 16, there are no mixing vanes on Nylund's partial spacer 11.

As to claim 17, applicant has not defined the phrase "arrangement for holding nuclear fuel rods". Absent such definition, the examiner interprets this arrangement to mean the presence of dimples or springs. Nylund's lattice reinforcing device does not have dimples and springs, and therefore meets the claim limitation.

Hirano et al. show, e.g., in Fig. 7 that his water holding member: a) does not enclose the peripheral rods and the adjacent layer of rods; b) has no mixing vanes; and c) has no arrangement for holding nuclear fuel rods.

3. Claims 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Nylund.

As to claim 18, Nylund discloses the central partial lattice as being formed by crossing plates 16 (see Fig. 4 and col. 2, lines 60+.

As to claim 19, the cells in Nylund inherently have dimensions greater than the dimensions of the fuel rods because otherwise the rods would not fit within the cell lattice. The clearance between a rod and its associated cell inherently increases during the life of the nuclear reactor because of several operations-related factors, including flow-induced vibration.

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References D-L further illustrate prior art.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 571-272-6880. The examiner can normally be reached on 6:00-4:30, Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RJP
March 20, 2007


RICARDO J. PALABRICA
PRIMARY EXAMINER